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ABSTRACT

The Career Development Responsibility scale was designed to measure the extent to which students feel that reinforcement in terms of success in preparation-acquisition performance situations in a career are considered to be contingent on the student's own behavior. The 30-item instrument was written so that two items represent each cell of a 3x5 matrix, the dimensions of which are career choice attitude and career choice competency of the Crites (1973) vocational maturity model. The response mode was a choice between an internal and external response. Content-and criterion-related validity were established. A measure of internal consistency was employed to establish reliability. (Author)

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A MEASURE OF CAREER DEVELOPMENT RESPONSIBILITY[1]

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The growing body of research on locus of control of reinforcement suggests that an individual's sense of personal efficacy has a very definite effect upon his behavior in many situations, including the experimental laboratory, the classroom, as well as the work setting. The early theoretical work is based on social learning theory, but has been extended into many contexts. Rotter (1966) noted that one of the determinants of the generalized expectancy variable "is the degree to which the individual perceives that reward follows from, or is contingent upon, his own behavior or attitudes [internal] versus the degree to which controlled by forces outside of himself [external]."

High internality is related to academic achievement (e.g., Coleman, et al. 1966; McGhee & Crandall, 1968; Nowicki & Roundtree, 1971; Crandall, Katkovsky, & Crandall, 1963; Shaw & Url, 1971; and Wolk & DuCette, 1973) and efforts to acquire information about one's future (e.g., Seeman & Evans, 1962; Davis & Phares, 1967; and Phares, 1968). In contrast, externally-oriented individuals are more apt to express unrealistic occupational aspirations (e.g., DuCette & Wolk, 1972), prefer to take chances rather than relying on their skills (e.g., Schneider, 1968), appear less able to cope with the demands of reality (e.g., Phares, 1968), and are more often members

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of the lower socioeconomic classes and/or disadvantaged groups (e.g. Stephens & Delys, 1971; Stephens, 1971; Battle & Rotter, 1963; and Graves, 1961).

Individuals rated as internally oriented are more likely to comply with work rules, observe safety procedures, work well with others, take better care of equipment, indicate more satisfaction with their job training, have better manners in the shop, and rate higher in work tolerance. They also exhibited more socially acceptable behavior in terms of cooperation, self-reliance, courtesy, reliability, work knowledge, and need for achievement (Tseng, 1970).

Studying job-seeking behaviors of unemployed individuals, Tiffany et al. (1970) found internally-oriented adults reflected more self-direction in job-seeking activities. Unemployed males were significantly more externally-oriented than were employed "well-adjusted" males. It was also noted that the acquisition of technical skills was not the complete answer to sustained employment. The researchers pointed out that unemployed individuals must also learn to accept responsibility for their welfare if they are to acquire and keep a job. It thus appears that the internally-oriented individual takes more responsibility for his own career development.

Stephens' (1973) work indicates the multidimensionality of the locus of control construct. Bradley and Gaa (1973) suggest the construct may be situation-specific such that locus of control beliefs in one situation can be modified without greatly affecting the locus of control of beliefs in other situations. For example, Bradley and Gaa were able to obtain statistically significant changes in locus of control scores in the intellectual domain without greatly affecting beliefs in the social domain. Because of the multi-dimensionality of the locus of control variable, it was decided to measure

the specific aspects under study in lieu of the global construct.

Objectives of the Inquiry

The primary objective of the present study was to develop an instrument designed to measure the extent to which students feel that reinforcement in terms of success in career preparation-acquisition-performance situations is considered contingent on their own behavior. If the scale measures accurately the internal-external locus of control dimension in career development, it should provide career counselors and teachers information about a student's feelings of responsibility about preparing himself for a career. Thus, the extent to which the student can be expected to search out information about careers for himself can be ascertained. If career education personnel assume that students feel they they can plan their own futures, and if, in fact, some students have the belief that they cannot control their own futures, little benefit may come from allowing students to explore occupations. The external person may require a structured learning situation, needing to be shown that he can do something about entering careers that interest him.

Procedures

The Career Development Responsibility scale (CDR) was designed so that two items were written for each cell of a 3 x 5 matrix, whose dimensions were the connative areas of the Crites (1973) attitude dimension and the cognitive area of his choice-competency dimension. From the connative area the CDR adopted independence and involvement as described by Crites, but collapsed orientation, preference and conception into a component that was labeled responsibility. In the cognitive area the CDR adopted self-knowledge,

occupational information, goal selection and planning, but dropped problem solving in preference to job acquisition-performance. The problem solving and planning dimensions tended to merge when items were written reflecting these constructs. Job acquisition-performance appeared to be a logical extension of this dimension. Each item in the matrix was written to reflect both dimensions of the matrix and to provide a response mode that forced the student to choose between an internal and external response. The 30 items on the instrument were scored by weighting external responses one and internal responses zero. Thus, a high score is indicative of a feeling of little control over one's own career development (external).

In addition to the CDR, the Intellectual Achievement Responsibility questionnaire (IAR) developed by Crandall et al. (1965) to measure children's beliefs in their own control of reinforcements in intellectual-achievement situations and the Career Maturity Inventory (CMI) developed by Crites (1973) to measure the maturity of the subjects' feelings and ideas about the choice of a career were used to collect data. Demographic data were obtained from an information sheet.

Data were obtained on the three instruments and the information sheet from students enrolled in the ninth grade of an Illinois junior high school in which a cross section of socioeconomic levels was represented. Students present on the day of data collection were included in the sample; thus results must be considered exploratory. Complete data for 189 students were obtained.

Results

Results are discussed in terms of reliability and validity of the CDR. Reliability was explored in terms of internal consistency. In addition to

content validity resulting from the procedure used in developing the instrument, criterion-related validity was also established.

Reliability. The coefficients of internal consistency were computed for the 30-item CDR scale as well as the 34-item IAR and 50-item CMI. These coefficients were .67, .68, and .74 respectively. The authors of the IAR and CMI report internal consistencies of .60 and .74 respectively. Thus it appears that the current sample is comparable to those used in research by Crandall and Crites.

Validity. As described above, content validity was established by writing items for a particular cell in a matrix, the dimensions of which approximated the vocational choice attitudes and vocational choice competencies of Crites' (1973) vocational maturity model. In addition, the items were submitted to a panel of judges to determine if the responses were, in their opinion, representative of the internal-external dichotomy. Items were then deleted or revised on the basis of expert opinion.

Criterion Related Validity. Criterion-related validity was obtained by correlating the CDR scale with criterion variables: the Intellectual Achievement Responsibility scale and the Career Maturity Inventory. It should be noted that the CMI attitude scale used in this study to establish criterion-related validity included only the career maturity attitude dimension, which attempts to measure maturity of vocational choice attitudes, rather than the belief in destiny control. As shown in Table 1, the CDR was significantly related to the career maturity measure ($r = -.210$, $N=189$, $p<.01$) and the three locus of control of reinforcement scales in the IAR: I+ ($r=.358$, $N=189$, $p<.001$), I- ($r=.361$, $N=189$, $p<.001$), and IAR Total ($r=.427$, $N=189$, $p<.001$). Substantially different results were obtained when the data for

males and females were considered separately. For males the CDR was significantly related to locus of control, the r's being .437 (N=103, $p<.001$) for I+, .433 (N=103, $p<.001$) for I-, and .516 (N=103, $p<.001$) for IAR Total but nonsignificantly related to career maturity (r=.111, N=103).

For the female group the CDR scale was significantly related to career maturity (r=.337, N=86, $p<.01$) and IAR Total (r=.228, N=86, $p<.05$) but not for I+ (r=.194, N=86) and I- (r=.184, N=86). It was observed, however, that the r's for I+ and I- approached significance for females and would probably have been significant for a larger N. The difference in relationship of career development responsibility and career maturity for males and females may indicate that the CDR variable has a differential effect on career maturity (Thomas, 1974).

Mediation of Career Maturity

The results from a study by Lefcourt and Wine (1969) showing that internality is related to attention-deployment and research (Davis & Phares, 1967; Phares, et al., 1968) showing the tendency for internals to seek information and/or use information in problem-solving situations gives rise to the hypothesis that the locus of control construct(s) may mediate the acquisition of mature career development attitudes. The following analyses are presented to give credence to this hypothesis--not to prove causality.

The colinearity of the criterion variables (r=.153, N=189, $p<.05$) indicates that the locus of control variable may mediate career maturity and suggests that the CDR is measuring a domain specific expectancy for control rather than providing an additional measure of career maturity. Support is given to this assumption by the correlation of the CDR and CMI with the

effect of the IAR Total score partialled out. The correlation between the CMI and IAR was reduced to .15 (N=189, $p < .05$) by partialling out the effect of the IAR Total score. Thus the measures of locus of control had both common and unique variance with the CMI.

Table 1--Intercorrelations of the CDR and Validity Variables by Sex

Variables	CDR	CMI	I+	I-	IAR Total
1. CDR	1	-.111 -.337**	.437*** .194	.433*** .184	.516*** .228*
2. CMI	-.210**	1	-.094 -.191	-.019 -.172	-.070 -.219
3. I+	.358***	-.144*	1	(.421) (.382)	(.871) (.862)
4. I-	.316***	-.111	(.413)	1	(.813) (.798)
5. IAR Total	.427***	-.153*	(.866)	(.813)	1

*Significant at .05 level
**Significant at .01 level
***Significant at .001 level
Lower triangular matrix=total sample of 189
Upper triangular matrix=males, first row, N=103
females, second row, N=86
( ) = intercorrelations of IAR subscores, significance levels not indicated

Another way to look at the effect of the CDR variable on the CMI is to compare the career maturity means of high, middle, and low CDR groups. A 2 x 2 x 3 factorial analysis of variance using the CMI as the dependent variable and blocking on sex and occupational choice status (the state of having or not having made a tentative career choice) was used for this purpose. Blocking on sex and occupational status was considered desirable to determine if there was any differential effect of the levels of CDR or CMI for the different sex and career decision groups. The main effect of sex was not

significant, but the main effects of occupational choice status and CDR levels were both significant, the F ratios being 18.00 (df=1,177, $p<.001$) and 9.23 (df=2,177, $p<.001$) respectively. The interaction of sex x CDR level approached significance (F=2.98, df=2,177, p=5.3).

The Newman-Kuels test indicated that low (internal) and middle CDR levels differed significantly (p .01) from the high (external) CDR group. Decided subjects had significantly more mature career attitudes than undecided subjects. An investigation of the cell means indicated that the group that had the lowest career maturity was the external undecided female while the highest career maturity was exhibited by the decided middle CDR females.

Relationship to Sex, Race, and SES

As shown in Table 2, sex has a low positive (r=.115, N=189, $p<.05$) (females = 1, males = 2) correlation with externality as measured by the CDR. Similar relationships were obtained between sex and externality as measured by the IAR, these correlations being .167 (N=189, $p<.05$) for the IAR Total, .079 (N=189, $p<.05$) for I+ and .213 (N=189, $p<.05$). It appears that sex group membership may, though slightly, affect the acquisition of a feeling of personal efficacy within the constructs of career development as well as in academic achievement situations. Sex group membership was also found to have a low negative relationship with the CMI (r= -.136, N=189, $p>.05$). Thus, in addition to obtaining correlations of the CDR with race and SES for the total sample, r's for sex groups were completed separately. Race (black vs. white) was not found to be related to the CDR for males, females, or the total group. Neither the IAR nor the CMI were found to be free from race bias in the present sample. Race and I+ were significantly related (r=.223, N=86, $p<.05$) for the female group. The CMI was significantly

related to race ($r=-.212$, $N=103$, $p<.05$) for the male group, as well as the total group ($r=-.196$, $N=189$, $p<.01$). Neither the criterion variable nor the validity variables were significantly related to SES (r's $\pm$ .064). However, sex group membership was found to have a differential effect upon the relationship of SES to the CDR and I- but not the IAR Total, I+, or CMI. The z value for the test of differences between correlation coefficients for males and females was significant for SES and the CDR ($z=2.13$, $p<.05$) and for SES and I- ($z=2.48$, $p<.05$) but not significant for SES and IAR Total ($z=1.83$), SES and I+ ($z=0.74$) and SES and CMI ($z=0.35$).

Table 2 Correlates of the CDR and Validity Variables

Variable	Sex	N	CDR	IART	IAR+	IAR-	CMI
Sex (1=F)		189	.115	.167	.079	.213**	-.136
Race (1=white)	M	103	.018	-.108	-.071	-.100	-.212*
	F	86	.027	.198	.233*	.083	-.186
	All	189	.020	.018	.056	-.033	-.196**
Duncan SES	M	91	.193	.082	-.022	.174	-.033
	F	69	-.154	-.217	-.140	-.230	.024
	All	160	.057	-.021	-.064	.037	-.013

*Significant at the .05 level
**Significant at the .01 level

Discussion

Programs designed to enhance the career development such as those being tested for NIE (Center for Vocational Education, 1972) and proposed by Coleman (1972) create a need for measurement instruments to test the noncognitive as well as cognitive outcomes of these alternative educational programs. As noted by Searcy (1973), instruments to measure the growth of individuals in such programs have, for the most part, not yet been developed.

Rationale for developing a locus of control of reinforcement scale within the constructs of career development was based on research (e.g., Tiffany, et al., 1970) indicating that the locus of control variable may mediate job success or, in the case of severely work-inhibited individuals (those with an uneven employment history due to job-hopping or extended periods of unemployment) may prevent job acquisition. In addition, the multidimensionality of locus of control (Bradley & Gaa, 1973; Stephens, 1973) and the susceptibility of change of locus of control in specific domains while not affecting the locus of control beliefs in other situations (bradley & Gaa, 1973) gives rise to the value of measuring change as the effect of a program designed to enhance internality in a specific domain.

Reliability and validity of the CDR were considered to be adequate. A possible reason for the reliabilities of both of these instruments not being higher is that each contains several aspects of the specific domain as well as several aspects of the generalized locus of control variable. It is reasonable to assume that the belief in fate can differ from luck as well as the control of powerful others.

Measures of criterion-related validity provided by the correlates of the CDR with the IAR and CMI were within the range desired. The correlation of the CDR with IAR of .43 was sufficient to conclude that the two instruments have commonality, and low enough to provide evidence of uniqueness. The differences between the results obtained for the male and female groups are reasons for concern and should be explored in future research. The correlation of the CDR and CMI were considered adequate. It is anticipated that the locus of control construct as measured by both the IAR and CDR may mediate the acquisition of a mature career attitude. It should be noted that the correlation of the IAR total score and the CMI was nearly as high as the correlation of the CDR and the CMI, these correlations being -.21 and -.15 respectively,

The results showing that subjects grouped in high, middle, and low CDR groups held significantly different career maturity attitudes is not sufficient to conclude that the CDR variable is a mediator of career maturity. Additional research will be required to determine if the CDR predicts gains in career maturity or develops concurrently with career maturity. Theoretically, it is hypothesized that belief in personal efficacy as a global construct and in the specific domain of career development mediates the acquisition of mature career attitudes.

The differences between the correlations for males and females between the CDR and SES is cause for concern. It appears that low SES may encourage the development of internality for females while the converse is true for males. This may be the result of expectations for females to contribute to the financial support of low SES families or the presence of a working mother as a role model.

Results appear to indicate that locus of control mediates the acquisition of mature career attitudes. In addition, it appears that locus of control can be changed toward higher internality by using an educational program (e.g., Pierce, et al., 1970). Thus, it is reasonable to suggest that an educational program can be designed to show students that they can have an effect on their own career development. Such a program should not only increase a student's internal orientation, but also indirectly affect his development of mature career attitudes.

It appears that such an educational program should be concurrent with any program designed to enhance career maturity. An alternative would be to provide some structure or pressure via observation for subjects who exhibit a substantial amount of externality. This, however, will not encourage future exploratory behavior.

In summary, the results of the present study support the validity of the CDR as being a measure within the domain of the generalized expectancy variable of locus of control of reinforcement and as a possible mediator of career development. However, several questions are still open for future research. (1) Will the CDR be predictive of future career maturity; (2) Is internality as measured by the CDR enhanced by curricula designed to develop career maturity, or does the CDR mediate such development; (3) What is the source of sex differences in the relationship of the CDR and CMI; and (4) What is the relationship of academic performance to the CDR. Answers to these and other questions will be sought in future research.

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